

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 88-108

NPDES NO. CA0004961

AMENDING WASTE DISCHARGE REQUIREMENTS:

TOSCO CORPORATION
AVON REFINERY
MARTINEZ, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereafter called the Board) finds that:

1. On April 20, 1988, the Board adopted Order No. 88-053, a National Pollutant Discharge Elimination System (NPDES) Permit, prescribing waste discharge requirements for Tosco Corporation, Avon Refinery (hereinafter called the discharger or Tosco).
2. The discharger proposes to use approximately 0.5 million gallons per day of reclaimed water, provided by the Central Contra Costa Sanitary District and the Contra Costa Water District, in a demonstration project to test the feasibility of using this water for cooling tower make-up water. During this demonstration project, the impact of using the reclaimed water on cooling tower operation and the overall industrial wastewater discharges will be evaluated by Tosco.
3. The source of this reclaimed water is the Central Contra Costa Sanitary District NPDES permitted discharge, (NPDES Permit No. CA0037648 and Order No. 84-77. This water receives further treatment to soften, filter and disinfect it to meet the standards of Title 22 of the California Health and Safety Code.
4. On May 18, 1988, the Board adopted Resolution No. 88-083, "Statement of Support for Municipal Wastewater Reuse in Petroleum Refinery Operations, Contra Costa County".
5. The Central Contra Costa Sanitary District is permitted to discharge pollutants to Carquinez Straits in compliance with the effluent limitations contained in their NPDES permit. These pollutants will be present in the influent to Tosco Corporation's cooling tower during the demonstration project.
6. Pollutants present in the Central Contra Costa Sanitary District effluent may cause a net increase in the pollutants present in the final discharge from Tosco Corporation. The total discharge of pollutants from the combined discharges of Shell Oil Company and Central Contra Costa Sanitary District will not increase as a result of this permit amendment.
7. Effluent limits contained in Tosco's NPDES permit do not currently provide for pollutants present in the influent water to the cooling tower demonstration project.

8. As this project is an NPDES Permit amendment, this Board, pursuant to Water Code Section 13389, is not required to comply with the provisions of Chapter 3 of Division 13 of the Public Resources Code (California Environmental Quality Act).
9. The Board has notified the discharger and interested persons and agencies of its intent to amend waste discharge requirements for the discharger.
10. The Board in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that this Board's Order No. 88-053 is amended as follows:

1. Effluent Limitation A.5. is revised to include:
5. The discharge of Waste 001 containing constituents in excess of the following limits is prohibited, with the following condition:

When the Discharger uses reclaimed water between June 15, 1988 and December 31, 1988 as influent water for cooling tower make-up water, credit for influent concentrations of the below listed constituents shall be granted according to the following procedure.

- a. Constituents for which effluent limit credit is sought must be sampled at least as frequently as is required in Part B. of the attached self-monitoring program for that constituent. Influent sampling will occur at influent sampling station I-1 defined in Section I.C. of Part B of the Self-Monitoring Program. The Discharger must also determine the time interval between introduction of a given constituent of concern in the influent water and the first appearance of this constituent in the final effluent. This determination must precede any calculation of credit for influent constituents.
- b. Credit for constituents listed in this table will be given on a mass basis. Influent concentration multiplied by total influent reclaimed water flow volume for that monitoring interval will yield an influent mass for each constituent, which is valid for that monitoring interval. After the appropriate time lag interval described in a. above, this influent mass of contaminant is then divided by the total effluent flow volume for that monitoring period to give a concentration credit which will apply for the monitoring interval. The monitoring interval is the time interval between sampling days; for example, weekly sampling yields a one week monitoring interval. A schematic example follows:

For constituent A, monitoring interval - one week, lag time 15 days

(Influent concentration A) X (Total influent flow volume for one week) = (Influent mass for constituent A)

(Influent mass for constituent A) / (Total effluent flow volume for one week, 15 days after influent week) = (Concentration credit to be added to existing concentration limit, valid for one week)

2. Provision 5. is revised to read as follows:

5. The Discharger shall comply with the attached self-monitoring program as adopted by the Board and as may be amended by the Board pursuant to EPA regulations 40 CFR 122.62, 122.63, and 124.5. The Discharger may petition the Board for modification of the self-monitoring program based on historical compliance data.

3. Provision 18. is included to read as follows:

18. When the Discharger uses reclaimed water during the time period of June 15, 1988 to December 31, 1988 as influent water for cooling tower make-up, pursuant to 40 CFR 122.45(g), credit for constituents listed in Effluent Limitation A.1. which are detected in the influent reclaimed water will be given according to the following procedure:

- a. Constituents for which effluent limit credit is sought must be sampled at least as frequently as is required in Part B. of the attached self-monitoring program for that constituent. Influent sampling will occur at influent sampling station I-1 defined in Section I.C. of Part B of the Self-Monitoring Program. The Discharger must also determine the time interval between introduction of a given constituent of concern in the influent water and the first appearance of this constituent in the final effluent. This determination must precede any calculation of credit for influent constituents.
- b. Influent concentration multiplied by total influent reclaimed water flow volume for that monitoring interval, and divided by the number of days in that monitoring interval will yield a daily influent mass for each constituent, which is valid for that monitoring interval. After the appropriate time lag interval described in a. above, this daily influent mass of constituent is added to the existing mass limits in Effluent Limitation A.1., and is valid for a time period equivalent to the monitoring interval. The monitoring interval is the time interval between sampling days; for example, weekly sampling yields a one week monitoring interval. A schematic example follows:

For constituent A, monitoring interval - one week, lag time 15 days

(Influent concentration A) X (Total influent flow volume for one week) / (7 days) = (Daily influent mass)

After 15 day lag time, Daily influent mass is added to effluent limit for A, and is valid for one week.

4. Provision 19. is included to read as follows:
19. If during the demonstration phase of the use of reclaimed water for cooling tower make-up, from June 15, 1988 to December 31, 1988, the Discharger experiences violations of NPDES waste discharge requirements and presents substantial evidence that the cause of violation was the use of reclaimed water, the staff and Board will include this information in any consideration of enforcement.
5. Provision 20. is included to read as follows:
20. The following constituents shall be analyzed at all receiving water sampling stations on a monthly basis:
- a. Nickel
 - b. Copper
 - c. Chromium (Total)
 - d. Selenium
 - e. Zinc

Table 1 of Part B. of the Self-Monitoring Program included in Order 88-053 is replaced by the attached revised Table 1.

6. The following addition is made to Section I. of Part B of the Self-Monitoring Program:

C. INFLUENT WATERS

<u>Station</u>	<u>Description</u>
I-1	Located at any point in the pipe which delivers only reclaimed water to the facility, but upstream of any water treatment unit, blending point or point of use.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 15, 1988.



Roger B. James
Executive Officer

Attachment

NPDES PERMIT NO. CA0004961

REVISED TABLE 1.

OF

SELF MONITORING PLAN

PART B.

TABLE 1 (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	B-001	E-003 E-004	All C Stat.
TYPE OF SAMPLE	C-24 G	G	G
Mercury (mg/l & kg/day)	W		
Nickel (mg/l & kg/day)	W		M
Vanadium (mg/l & kg/day)	W		
Zinc (mg/l & kg/day)	W		M
Phenolic Compounds (mg/l & kg/day)	W		
All Applicable Standard Observations		E	
Bottom Sediment Analyses and Observations			
Total Ident. Chlor. Hydro- carbons (mg/l & kg/day)			
Total Organic Carbon (TOC) (mg/l & kg/day)		E	
Hexavalent Chromium	W		
Unionized Ammonia (as N)			M
COD (mg/l & kg/day)	W		
Selenium (10)	W		M
Volatile Organics (5)		2Y (7)	
Acid/Base/Neutral Organics (6)		2Y (7)	
Polynuclear Aromatic Hydrocarbons (8)	M		

LEGEND FOR TABLE 1

<u>TYPES OF SAMPLES</u>	<u>TYPES OF STATIONS</u>
G = grab sample	I = intake stations
C-24 = composite sample - 24-hour	E = waste effluent stations
Cont = continuous sampling	C = receiving water stations
O = observation	B = bottom sediment stations

FREQUENCY OF SAMPLING

E = each occurrence	M = once each month
D = once each day	2M = every 2 months
W = once each week	Y = once each year
2/W = 2 days per week	2Y = twice each year
	cont = continuous

FOOTNOTES FOR TABLE 1

- (1) Oil and grease sampling shall consist of 3 grab samples taken at 2 hour intervals during the sampling day, with each grab being collected in a glass container. The entire volume of each sample shall be composited prior to analysis. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.
- (2) Daily minimum and maximum shall be reported.
- (3) The discharger shall determine compliance utilizing flow-through bioassays. Immediately upon the death of over half the test fish, the LC-50 of the discharge shall be determined using at least 4 dilutions in a static bioassay.
- (4) Receiving water analysis for sulfides should be run when dissolved oxygen is less than 5.0 mg/l.
- (5) Volatile Organic Toxic Pollutants shall be analyzed using EPA Method 624 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.

- (6) Acid and Base/Neutral Extractable Organic Toxic Pollutants shall be analyzed using EPA Method 625 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.
- (7) Grab samples shall be collected coincident with samples collected for the analysis of the regulated parameters. In addition, the grab samples must be collected in glass containers.
- (8) Polynuclear Aromatic Hydrocarbons shall be analyzed using EPA Method 610 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Note that the samples must be collected in amber glass containers. These samples shall be collected coincident with samples collected for the analysis of the regulated parameters. An automatic sampler which incorporates glass sample containers and keeps the samples refrigerated at 4 C and protected from light during compositing may be used. Note that the 24-hour composite samples may consist of eight grab samples collected at three-hour intervals. The analytical laboratory shall remove flow-proportioned volumes from each sample vial or container for the analysis.
- (9) Soluble BOD is defined here as the 5-day, 20°C BOD of filtrate that passes through a standard glass fiber filter as described in Standard Methods for the Examination of Water and Wastewater, 15th Edition, Part 209 B., APHA, AWWA, WPCF, (1980).
- (10) Selenium must be analyzed only by the atomic absorption, gaseous hydride procedure (EPA Method No. 270.3/ Standard Method No. 303 E).